

ELECTRIC LOAD MANAGEMENT CENTER

ABSTRACT

An electrical distribution system is disclosed that includes a gateway module (100) including logic (112) to interface to a vehicle management computer (VMC) (50) via a dual redundant standard data bus (1). The gateway module (100) has redundant microcontrollers (114, 116) operably connected to the VMC (50) for selectively controlling supply of electrical power to a plurality of separate electrical loads (120). The electrical power distribution center also has two internal serial data buses (2,3) that are of two different types. The redundant microcontrollers (114, 116) are each connected to the two internal buses (2,3). A plurality of Load Management Modules (300) is provided. Each are connected to the internal serial data buses (2,3) for receiving control commands via the gateway module (110). Each Load Management Module (300) includes a local microcontroller (310); a plurality of power switching devices (320); and a plurality of application specific integrated circuits (330) corresponding to the plurality of power switching devices (320) for interfacing the power switching devices (320) to the local microcontroller (310).